54Mbps Wireless LAN
Pocket Access Point

USER MANUAL

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Safety Information

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: except the channel 10 through 13, law prohibits the use of other channels.

Contents

1. Overview

1.1 Product Feature

- ***3-in-1 function build-in*** with easily accessible hot-key switch, including Access Point, Access Point Client and Wireless Router. It's also the ***smallest*** networking device in the market.
- ***Low power consumption*** <less than 460 mA>, and ***support USB power adapter*** which provides the best mobility.
- Compliance with ***IEEE 802.11g*** and ***802.11b*** standards
- Achieving data rate up to ***54Mbps*** for 802.11g and ***11Mps*** for 802.11b with wide range coverage
- Strong network security with ***WEP*** encryption, ***WPA-PSK*** and ***WPA2-PSK*** function.
- Quick and easy setup with ***Web-based management utility***.

1.2 System Requirements

- Windows 98SE, Millennium Edition (ME), 2000 and XP operating systems
- Microsoft Internet Explorer 5.5 or higher
- At least one RJ-45 Ethernet network adapter installed.

1.3 How to switch within 3 modes

- 3 modes are AP, Client and wireless RT.
- Switch to the mode user wants with the hot key, then re-plug the power.
- Few seconds later, the device will reboot automatically to the mode user wants.
- For **AP mode**, please use **192.168.1.1** as the default IP to configure the settings.
- For **Client mode**, please use **192.168.1.50** as the default IP to configure the settings.
- For **Wireless RT mode**, please use **192.168.1.1** as the default IP to configure the settings, note that the settings must through the wireless connection, instead of RJ45 cable.

2. Getting Start with AP mode

2.1 Know the 54Mbps Wireless Network Access Point

Ports:

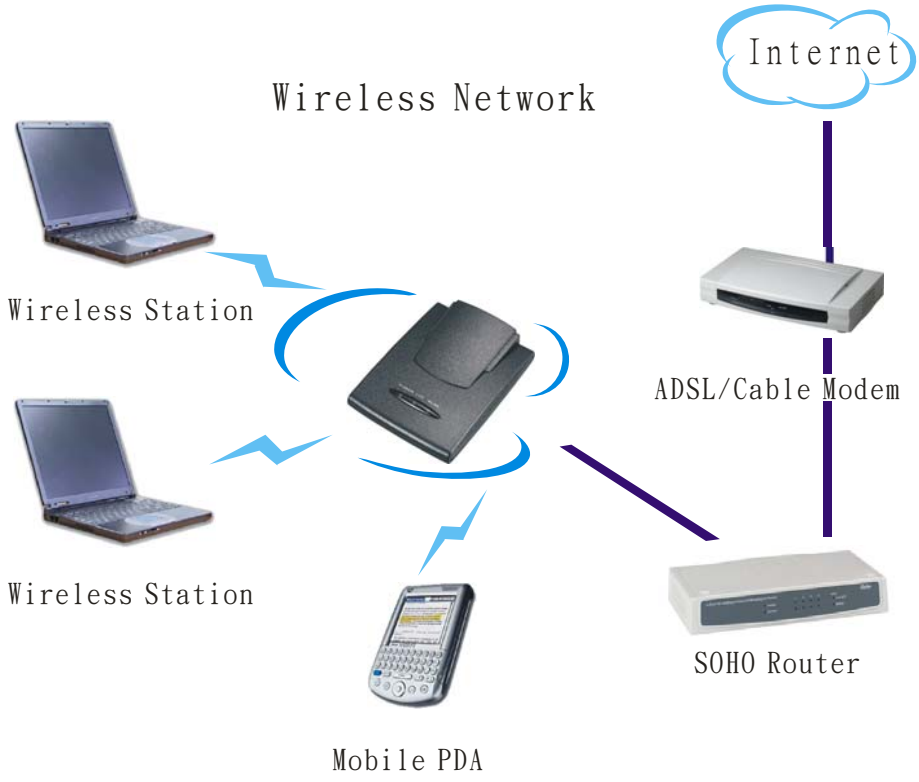
- Power Receptor
- Reset Button
- RJ-45 Ethernet Port
  Cross-over cable is required to connect to computer directly

LEDs:

- Power LED: ON when the unit is powered up
- LAN LED: ON indicates LAN connection; BLINK indicates LAN activity
- WLAN LED: ON indicates WLAN is working; BLINK indicates wireless activity.

2.2 Connect to the 54Mbps Wireless Network Access Point

Build the Infrastructure Mode



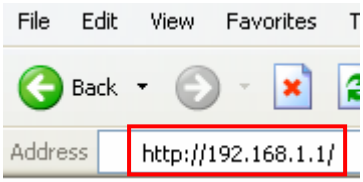
In order to setup an Infrastructure of a wireless network such as the example shown above, user will need the following:

1. A broadband Internet connection.
2. ADSL or Cable modem provided by ISP as part of the broadband connection installation.
3. A Router that connects to the ADSL/Cable modem for Internet connection sharing.
4. An Access Point to connect with the Router to form a wireless infrastructure network.
5. Wireless clients equipped with wireless networking devices such as wireless PC Card for wireless connection.

2.3 Quick Setup with Wizard

2.3.1 Access the Setting Menu

User could start to access the configuration menu anytime by opening a web browser window and typing the IP address of this access point. The default IP is **192.168.1.1**.



The below window will popup. Please enter the user name and password. Both of the default is “admin”.

Now, the main menu screen is popup.

2.3.2 Setup with Wizard

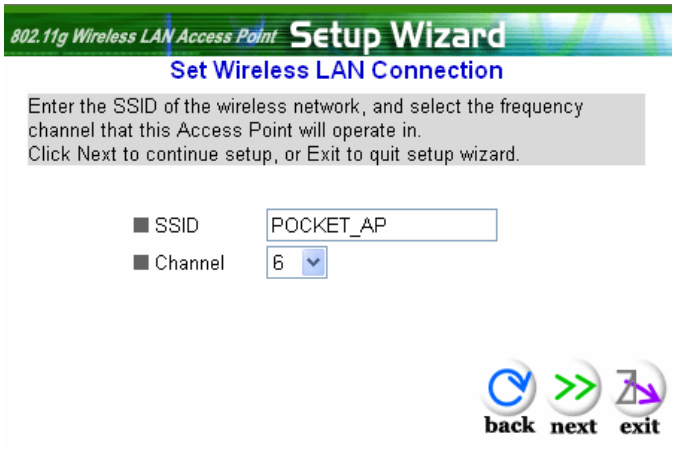
Setup wizard is provided as the part of the web configuration utility. User can simply follow the step-by-step process to get Access Point configuration ready to run in 4 easy steps by clicking on the "**Wizard**" button on the function menu. The following screen will appear. Please click "**Next**" to continue.

Step 1: Set Password

User can change the password and then click "**Next"** to continue.

Step2: Set WLAN Connection

Please type the name of SSID and select the channel. Then, click "**Next**" to continue.



Step 3: Set Wireless LAN Connection

If user doesn't want to use "default" as the SSID, user can change SSID here. User can also choose different channel to avoid noise coming from other wireless networking devices. Please click "**Next"** to continue.

Step 4: Set WEP Encryption

If user wants to enable WEP, please click "**Enabled**". Then, select the key size of WEP encryption and enter the key value in the key text box. Please click "**Next"** to continue.

Step 5: Setup Completed

The Setup wizard is now completed. The new settings will be effective after the Access Point restarted. Please click "**Restart**" to reboot the Access Point. If user does not want to make any changes, please click "**exit**" to quit without any changes. User also can go back to modify the setting by clicking "**Back**".

3. Configuration the AP Mode

3.1 Status

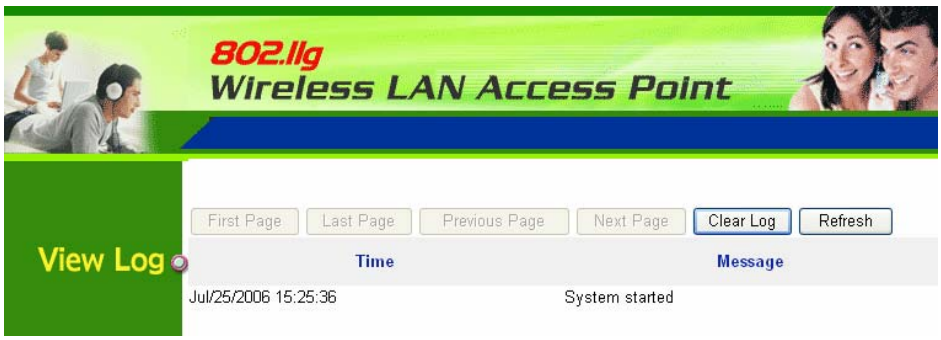
This page as below shows the following information.

Firmware Version: Shows the current firmware version.

LAN: Shows the Mac address, IP address (default: 192.168.1.1), Subnet Mask, Gateway Address. The current LAN traffic calculated in terms of number of packets sent and received by AP through wired connection is also displayed.

Wireless: Shows the Mac address, current ESSID, the status of Encryption Function (Enable or Disable), the current using channel. The current wireless traffic calculated in terms of number of packets sent and received by AP through wireless communication is also displayed.

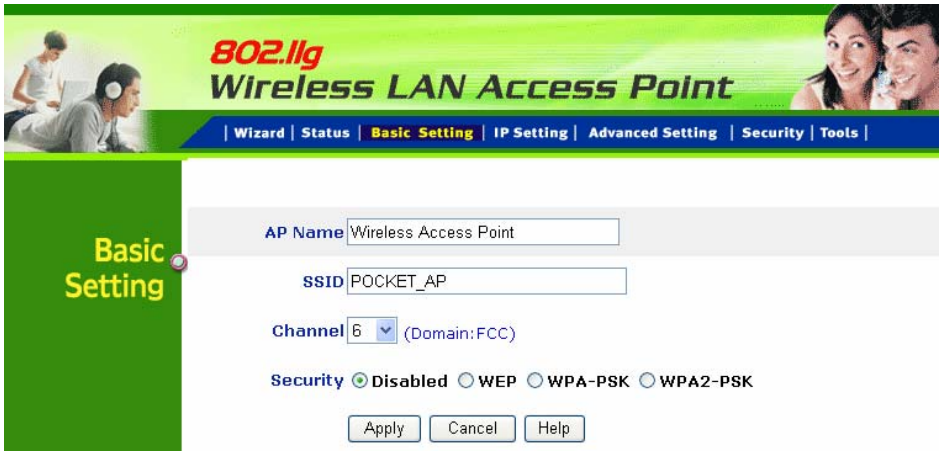
View Log: Once clicked, the page will change to login page. The login page records every event and the time that it happens.



User may clear the entries recorded in the log by clicking the "**Clear Log**" button, and refresh the screen to show the latest log entries by clicking the "**Refresh**" button.

3.2 Basic Setting

This is the page allow user to change the access point settings.



AP Name: The name of the AP, which can be used to identify the Access Point among the all the Access Points in the wireless network.

SSID: Service Set Identifier, which is a unique name shared among all clients and nodes in a wireless network. The SSID must be identical for each clients and nodes in the wireless network.

Channel: The channel that AP will operate in. User can select the channel range from 1 to 11 for North America (FCC) domain, 1 to 13 for European (ETSI) domain and 1 to 14 for Japanese domain. (We only provide FCC domain for North America, ETSI domain for European)

Security: There are four options: Disable; WEP; WPA-PSK and WPA2-PSK.

WEP

WEP Type: Open System allows public access to the router via wireless communications; Shared Key requires the user to set a WEP key to exchange data with other wireless clients that have the same WEP key.

WEP Key: Select the level of encryption from the drop-down list. The AP supports, 64- and 128-bit key length encryption.

Mode: Select the key mode in ASCII or HEX format.

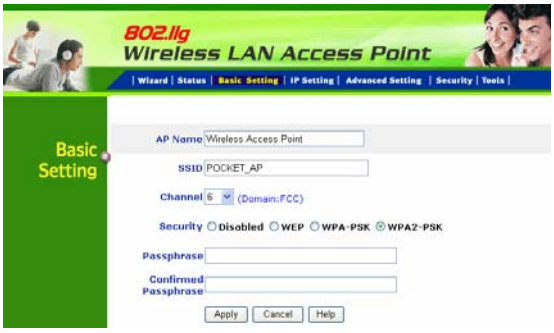
Key 1 ~ Key 4: Enables user to create an encryption scheme for Wireless LAN transmissions. Manually enter a set of values for each key. Select a key to use by clicking the radio button next to the key.

Apply: For the changes made to any of the items above to be effective, click **"Apply"**. The new settings are now been saved to Access Point and will be effective once the Access Point restarts.

Note: *When WEP security is enabled, all the wireless clients that wish to connect to the Access Point must also have WEP enabled with the identical WEP Key value entered.*

WPA-PSK / WPA2-PSK

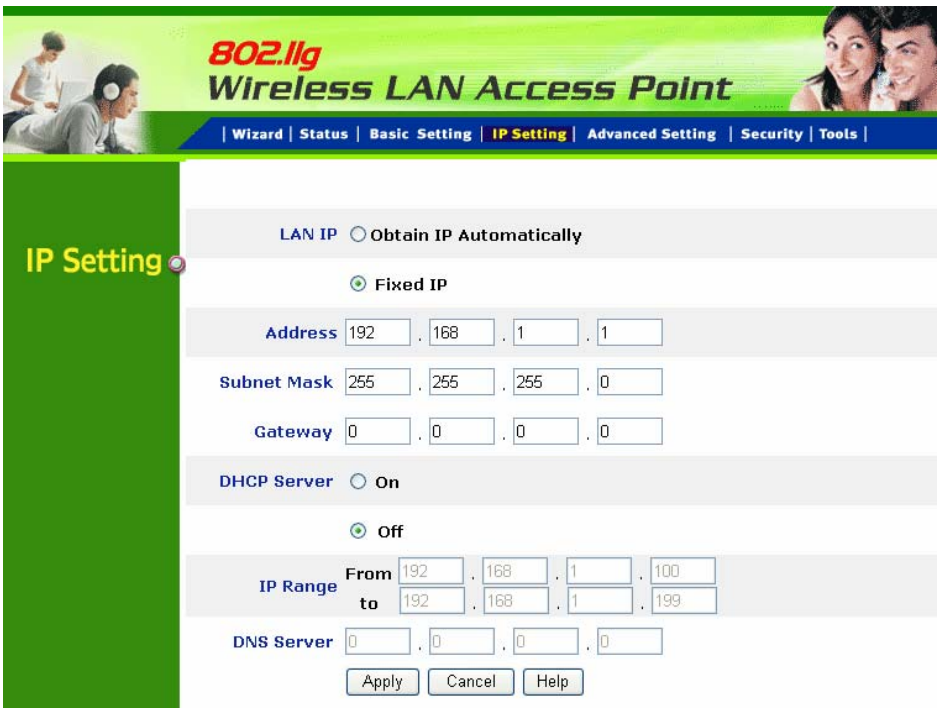
If WPA-PSK or WPA2-PSK is selected, please set the PSK key in the pass phrase field. The length should be 8 characters at least.



Note: Once **WPA-PSK / WPA2-PSK** function enables, it will take some time to make the setting active.

3.3 IP Setting

This page allows user to configure the IP and DHCP settings of the Access Point.



The default IP address of this access point is 192.168.1.1 with the subnet mask of 255.255.255.0. User can type in other values for IP Address, Subnet Mask and Gateway and click **"Apply"** button for the changes to be effective.

User can also set the Access Point to obtain the IP from a DHCP server, but it is not recommended. Select the option **"Obtain IP Automatically"** and click **"Apply"** button for the changes to be effective.

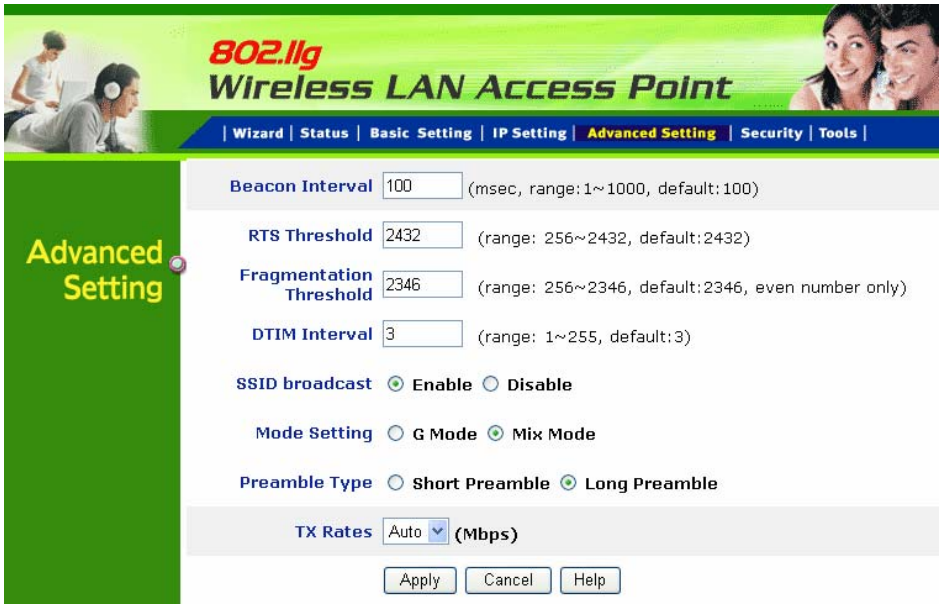
DHCP Server: It is not recommended to enable the DHCP Server if user has a DHCP server running in LAN network because it probably will cause possible the conflict of IP assignment. Enable the DHCP server function by selecting the option "On", and enter the IP range.

DNS Server: Type up to DNS IP address in the text boxes. Your ISP will provide you with this information.

Click **"Apply"** for the changes to be effective

3.4 Advanced Setting

This page contains configurations for advanced users, which the change reflects the wireless performance and operating modes.



Beacon Interval: To set the period of time in milliseconds that AP sends out a beacon. Default is 100 milliseconds.

RTS Threshold: To set the size of RTS/CTS packet size. Default is 2432 bytes.

Fragmentation Threshold: To set the number of bytes used for the fragmentation boundary for directed messages. Default is 2346 bytes.

DTIM Interval: This value indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the access point has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM interval value. Access point clients hear the beacons and awaken to receive the broadcast and multicast messages.

SSID Broadcast: While SSID Broadcast is enabled, all wireless clients will be able to communicate with the access point. For secure purpose, user may want to disable SSID broadcast to allow only those wireless clients with the AP SSID to communicate with the access point.

Mode setting: 1) G mode- Only support 11g client to connect!

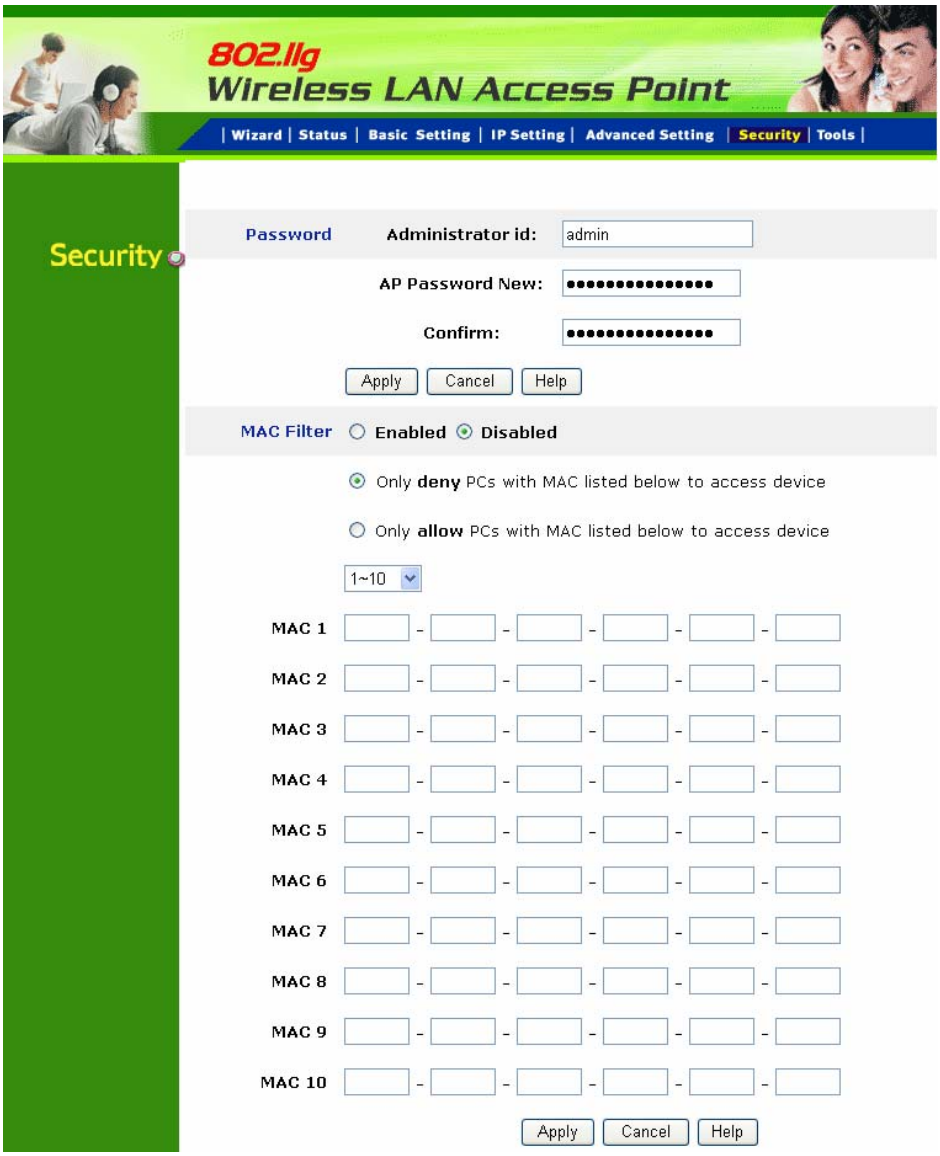
2) Mix mode- Support 11b&11g client to connect!

Preamble type: The usage of the preamble is to limit the packet size of the data to transmit. It is recommended to choose the short preamble when the link quality is bad, it is to prevent the wasting time of resending a long packet that is lost.

TX Rates: User also can fix the transmission at specific data rate, if choose “Auto” data rate, the AP will change the data rate to have the best receive or transmit quality

3.5 Security

This page is where user configures the security features supported by this Access Point.



Administrator id: Allow you change the administrator user id.

Password: Allow you to change the new login password. Follow the steps below:

1. Enter the new password in the "**AP Password New:**" field.
2. Enter the new password again in the "**Confirm**" field.
3. Click "**Apply**"

MAC Filter: MAC Filter function controls the MAC of the network devices that are listed in this table for access authorization or denial. When MAC Filter is enabled, by selecting the "**Enabled**" radio box, select one of two choices:

●Only deny PCs with MAC listed below to access device

●Only allow PCs with MAC listed below to access device

The maximum number of MAC addresses that can be stored is 50. You can browse through the MAC address saved by selecting the drop-down box.

For any changes made in the security page, click "**Apply**" for the changes to be effective.

3.6 Tools

Four functions are provided in this page, Backup, Restore Settings, Restore default settings and Firmware Upgrade.

Backup Settings: Click on "**Backup**" button, which will open a FileSave Dialog box, where user gets to save all the current settings and configurations to a file.

Restore Settings: Click on the "**Browse**" button to open a FileOpen Dialog box, where user gets to select the file, which saves previous settings and configurations. Upon selecting the saved file, click "**Restore**" and complete the restore process when the access point re-operates after it restarts.

Restore to default settings: Click on "**Default**" button to restore the access point back to its manufacture default settings.

Firmware Upgrade: Click on the "**Browse**" button to open a FileOpen Dialog box, where gets to select the firmware file, which download from the web for the latest version. Upon selecting the firmware file, click "**Upgrade**" and complete the firmware upgrade process when the Access Point re-operates after it restarts.

4. Getting Start with Client mode

4.1 Know the Wireless Ethernet Adapter

Ports:

- Power Receptor
- Reset Button
- RJ-45 Ethernet Port
  Cross-over cable is required to connect to computer directly

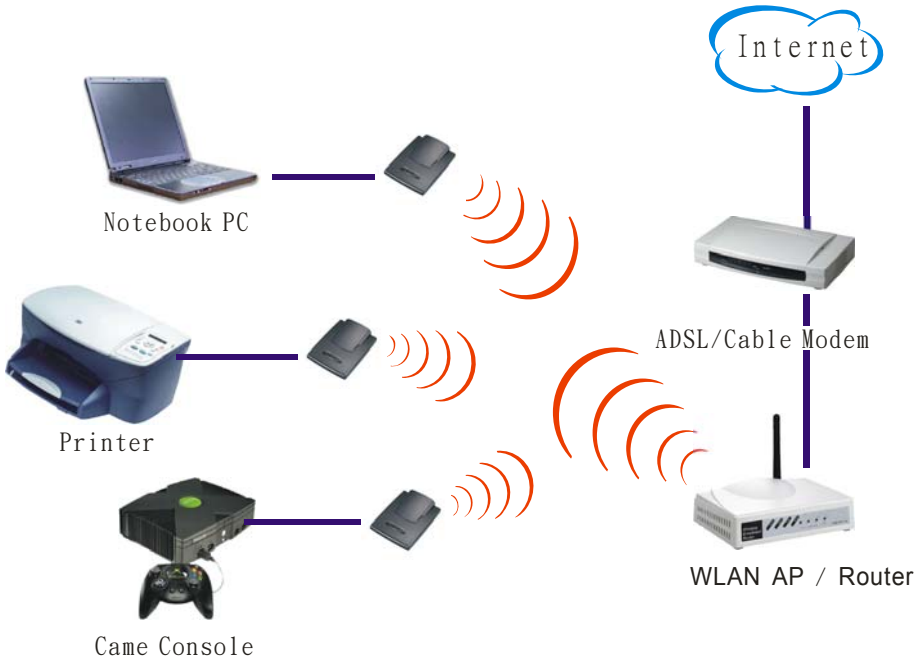
LEDs:

- Power LED: ON when the unit is powered up
- LAN LED: ON indicates LAN connection; BLINK indicates LAN activity
- WLAN LED: ON indicates WLAN is working; BLINK indicates wireless activity.

4.2 Connect to the Wireless Ethernet Adapter

This wireless Ethernet adapter transforms the Ethernet-enabled devices to have the wireless function. The wireless Ethernet adapter enables wireless communication over network. There are two examples shown as the below.

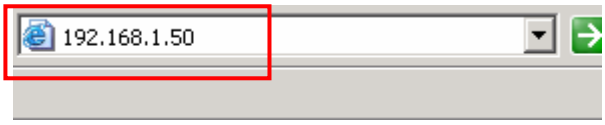
Infrastructure Mode:



Ad-Hoc Mode:

4.2.1 Access the Setting Menu

User could start to access the configuration menu anytime by opening a web browser window by typing the IP address of this access point. The default IP is **192.168.1.50**.



The below window will popup. Please enter the user name and password. Both of the default is “admin”.

Now, the main menu screen is popup.

5. Configuration Wireless Ethernet Client mode

5.1 Status

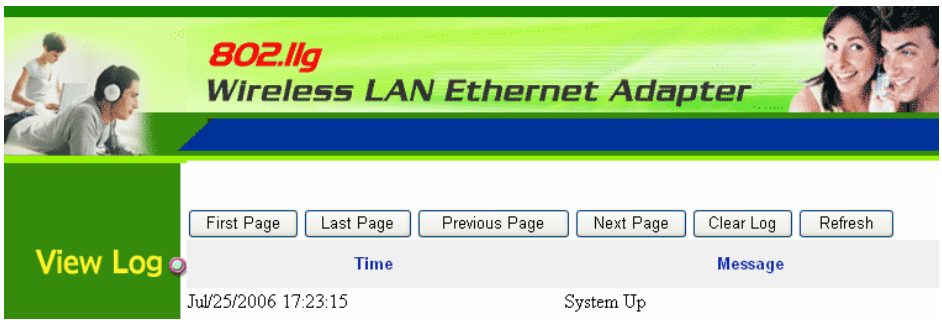
This page as below shows the following information.

Firmware Version: Shows the current firmware version.

LAN: Shows the Mac address, IP address (default: 192.168.1.50), Subnet Mask, Gateway Address. The current LAN traffic calculated in terms of number of packets sent and received by AP through wired connection is also displayed.

Wireless: Shows the Mac address, current ESSID, the status of Encryption Function (Enable or Disable), the current using channel. The current wireless traffic calculated in terms of number of packets sent and received by AP through wireless communication is also displayed.

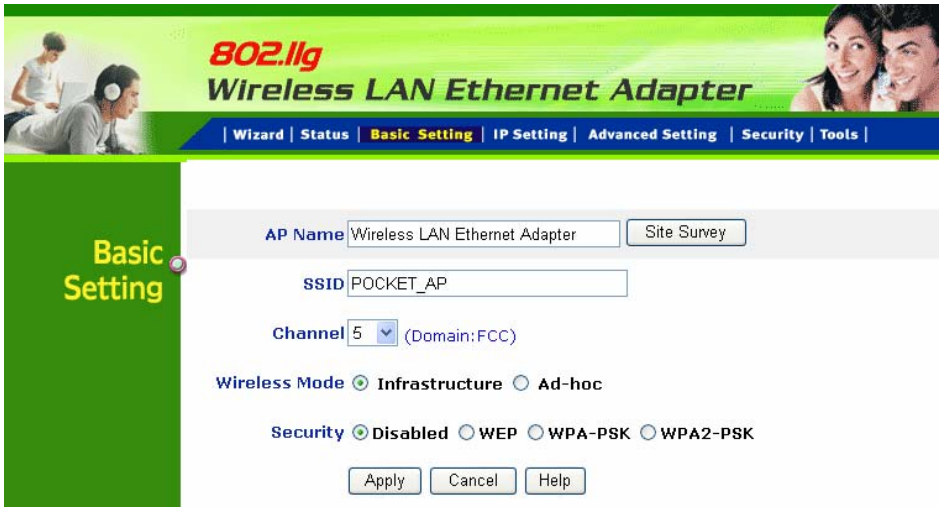
View Log: Upon clicked, the page will change to log page. The log page records every event and the time that it happens.



User may clear the entries recorded in the log by clicking the "**Clear Log**" button, and refresh the screen to show the latest log entries by clicking "**Refresh**" button.

5.2 Basic Setting

This is the page allow to change the settings of access point.



AP Name: The name of the AP, which can be used to identify the Access Point among the all the Access Points in the wireless network.

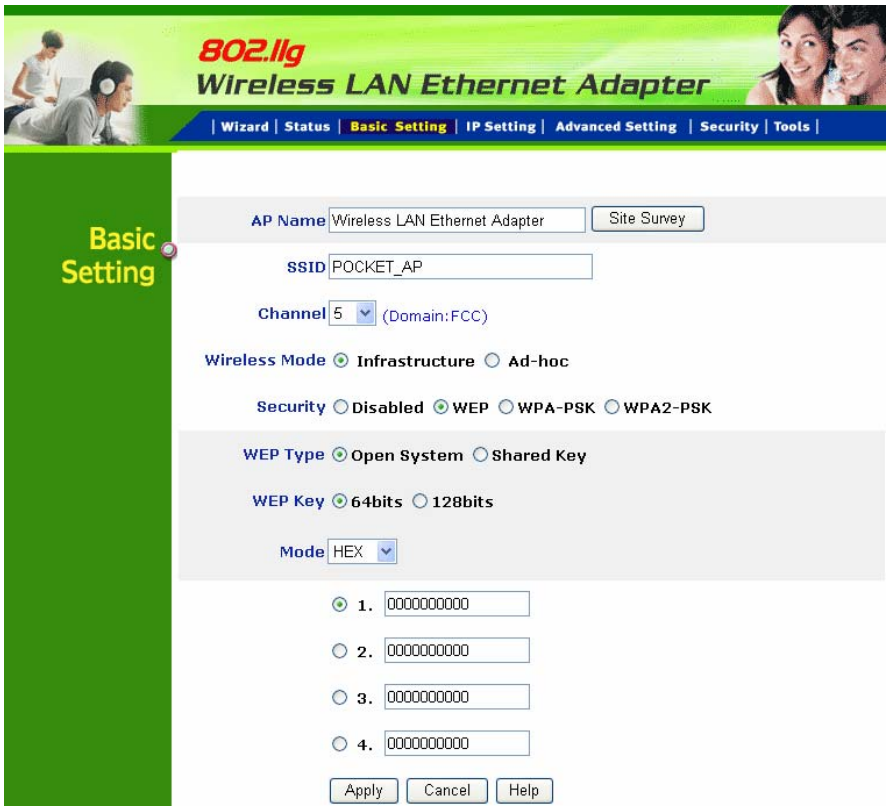
SSID: Service Set Identifier, which is a unique name shared among all clients and nodes in a wireless network. The SSID must be identical for each clients and nodes in the wireless network.

Channel: The channel that AP will operate in. User can select the channel range of 1 to 11 for North America (FCC) domain, 1 to 13 for European (ETSI) domain and 1 to 14 for Japanese domain.

Wireless Mode: Select the AP in client mode works for Infrastructure application or Ad-hoc application.

Security: There are four options: Disable; WEP; WPA-PSK and WPA2-PSK.

WEP



WEP Type: Open System allows public access to the router via wireless communications; Shared Key requires the user to set a WEP key to exchange data with other wireless clients that have the same WEP key.

WEP Key: Select the level of encryption from the drop-down list. The AP supports, 64- and 128-bit key length encryption.

Mode: Select the key mode in ASCII or HEX format.

Key 1 ~ Key 4: Enables user to create an encryption scheme for Wireless LAN transmissions. Manually enter a set of values for each key. Select a key to use by clicking the radio button next to the key.

Apply: For the changes made to any of the items above to be effective, click **"Apply"**. The new settings are now been saved to Access Point and will be effective once the Access Point restarts.

Note: *When WEP security is enabled, all the wireless clients that wish to connect to the Access Point must also have WEP enabled with the identical WEP Key value entered.*

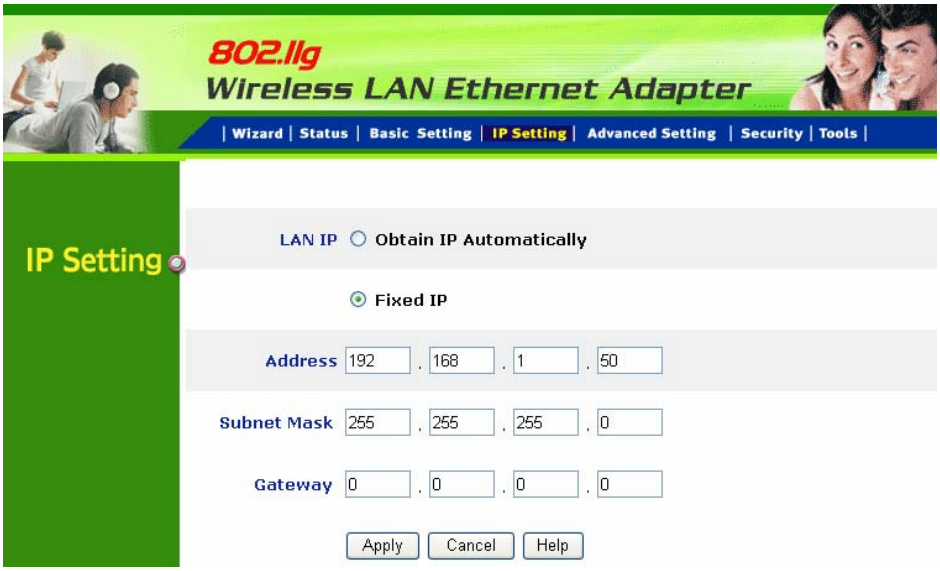
WPA-PSK / WPA2-PSK

If WPA-PSK or WPA2-PSK is selected, please set the PSK key in the pass phrase field. The length should be 8 characters at least.

Note: Once **WPA-PSK / WPA2-PSK** function enables, it will take some time to make the setting active.

5.3 IP Setting

This page allows users to configure the IP and DHCP settings of the Pocket Access Point.

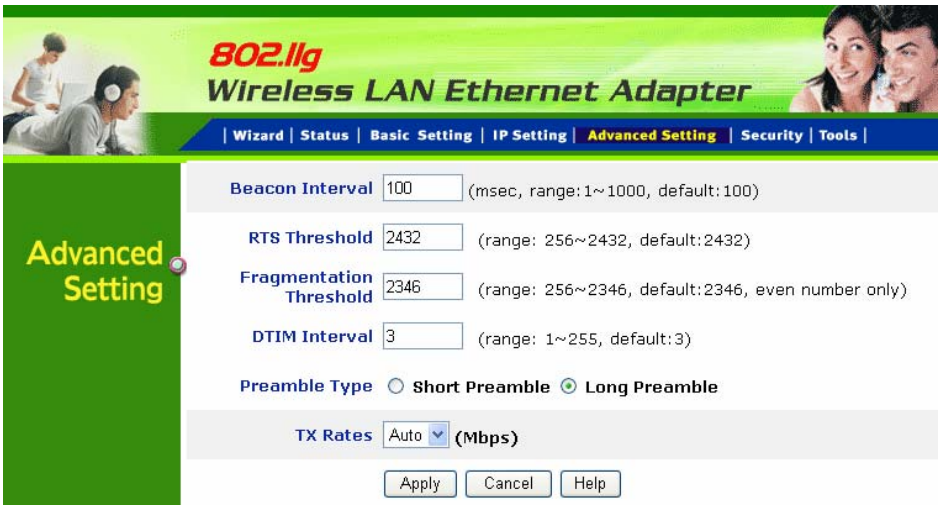


The default IP address of the Pocket Access Point in **Clint mode** is **192.168.1.50** with the subnet mask of 255.255.255.0. User can type in other values for IP Address, Subnet Mask and Gateway and click "**Apply**" button for the changes to be effective.

User can also set the Pocket Access Point to obtain the IP from a DHCP server, but it is not recommended. Select the option "**Obtain IP Automatically**" and click "**Apply**" button for the changes to be effective.

5.4 Advanced Setting

This page contains configurations for advanced users, which the change reflects, the wireless performance and operating modes.



Beacon Interval: To set the period of time in milliseconds that AP sends out a beacon. Default is 100 milliseconds.

RTS Threshold: To set the size of RTS/CTS packet size. Default is 2432 bytes.

Fragmentation Threshold: To set the number of bytes used for the fragmentation boundary for directed messages. Default is 2436 bytes.

DTIM Interval: This value indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the access point has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM interval value. Access point clients hear the beacons and awaken to receive the broadcast and multicast messages.

Preamble Type: Select **Long** or **Short** Preamble type. Preamble is a sequence of bits transmitted at 1Mbps that allows the PHY circuitry to reach steady-state demodulation and synchronization of bit clock and frame start. Two different preambles and headers are defined: the mandatory supported Long Preamble and header, which interoperates with the 1 Mbit/s and 2 Mbit/s DSSS specification (as described in IEEE Std 802.11), and an optional Short Preamble and header (as described in IEEE Std 802.11b). At the receiver, the Preamble and header are processed to aid in demodulation and delivery of the PSDU. The Short Preamble and header may be used to minimize overhead and, thus, maximize the network data throughput. However, the Short Preamble is supported only from the IEEE 802.11b (High- Rate) standard and not from the original IEEE 802.11. That means that stations using Short-Preamble cannot communicate with stations implementing the original version of the protoco

TX Rates: User also can fix the transmission at specific data rate, if choose “Auto” data rate, the Wireless Ethernet Adapter will change the data rate to have the best receive or transmit quality.